

Status Update: Water Quality Standards in California

Parameter: Toxicity

Status:

- The current California toxicity contains a narrative toxicity objective. However, the state has difficulty in implementing the narrative objective where reasonable potential demonstrates that a numerical limit must be established.

Milestones:

- R9 provides technical assistance in reviewing the State's policy. This assistance includes both technical staff review and contract dollars with Tetra Tech to provide preparation of documents needed for the State.
- Technical products developed to assist the State:
 - Diamond J, Denton D, Anderson B, Phillips B. 2011. It is time for changes in the analysis of Whole Effluent Toxicity data. *Integrated Environ Assess and Management*.
 - Denton DL, Diamond J, Zheng L. 2011. Test of Significant Toxicity: A statistical application for assessing whether an effluent or site water is truly toxic. *Environ Toxicol Chem*. 30(5)1117-1126.
 - Effluent, Stormwater, and Ambient Toxicity Test Drive Analysis of the Test of Significant Toxicity (TST) Report - December 2011.

Projected Dates:

- CA State Board is conducting an additional external peer review of the TST approach as proposed in their policy. This is anticipated to take up to 4-6 months to obtain review and revisions as necessary.
- CA State Board is anticipating adopting the policy 4th Q FY12.
- R9 would review the State package for approval 1st Q FY13.

Current Draft Water Quality Standard Values:

- The chronic toxicity objective is expressed as a null hypothesis and a regulatory management decision of 0.75 for chronic toxicity methods, where a 0.25 effect level (or more) at the instream waste concentration (IWC) demonstrates an unacceptable level of chronic toxicity. The following statement shall be used as the null hypothesis: H_0 : Mean response (IWC) $\leq 0.75 \cdot$ mean response (control). Compliance (i.e., attainment of the water quality objective) is demonstrated by rejecting this null hypothesis.
- The acute toxicity objective is expressed as a null hypothesis and a regulatory management decision of 0.80 for acute toxicity methods, where a 0.20 effect level (or more) at the IWC demonstrates an unacceptable level of acute toxicity. The following statement shall be used as the null hypothesis: H_0 : Mean response (IWC) $\leq 0.80 \cdot$ mean response (control). Compliance (i.e., attainment of the water quality objective) is demonstrated by rejecting this null hypothesis.